

**REMARKS**

This is in response to the Office Action mailed on May 25, 2004, in which all pending claims 1-19 were rejected. Specifically, claims 1-4, 6-14, 16 and 17 were rejected under the judicially created doctrine of obviousness-type double patenting, and claims 1, 2 and 5-19 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of references.

**Claims Rejections – Double Patenting**

Claims 1-4, 6-14, 16 and 17 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 8, 9, 11-19 and 21 of U.S. Patent No. 6,653,641.

With this Amendment, a Terminal Disclaimer is submitted to obviate this rejection. The rejection of claims 1-4, 6-14, 16 and 17 under the judicially created doctrine of obviousness-type double patenting should accordingly be withdrawn.

**Claim Rejections – 35 U.S.C. § 103**

Claims 1, 2 and 5-19 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of references. These claims are addressed specifically below.

A. Claims 1, 5-8 and 12-19

Claims 1, 5-8 and 12-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Pub. No. 2003/0129274 to Garwood, in view of U.S. Patent No. 5,825,037 (Nablo).

With this Amendment, independent claim 1 has been amended to include the elements previously recited in dependent claim 3, which was not rejected under 35 U.S.C. § 103(a). Accordingly, claim 1 is in condition for allowance. (Claim 3 has been canceled without prejudice, and claim 4 has been amended to depend from claim 1 rather than canceled claim 3.)

Claim 5 has been amended to depend from amended claim 1, rather than from canceled claim 3. Claim 5 is allowable with the base claim from which it depends.

With this Amendment, claim 6 has been rewritten in independent form. Although the Examiner rejected claim 6 under 35 U.S.C. § 103(a), no disclosure, teaching or suggestion in the prior art of record was noted that would render obvious the recitation of claim 6 that "the at least one

bulk material tube comprises a plurality of bulk material tubes each offset from adjacent tubes in an alternating pattern." Accordingly, claim 6 (as rewritten in independent form) is in condition for allowance.

Claims 7 and 8 depend from amended independent claim 1, and are allowable therewith.

With this Amendment, claim 12 has been rewritten in independent form. Although the Examiner rejected claim 12 under 35 U.S.C. § 103(a), no disclosure, teaching or suggestion in the prior art of record was noted that would render obvious the recitation of claim 12 that "the bulk material tube is elliptical in shape and has a wall with a thickness that is thicker around edge portions of the bulk material tube than around a central portion of the bulk material tube." The Examiner pointed to the teaching of water cooled cavity walls in the prior art to reject claim 12, but this feature is not recited in claim 12. Accordingly, claim 12 (as rewritten in independent form) is in condition for allowance.

Claim 13 depends from amended independent claim 1, and is allowable therewith.

With this Amendment, claim 14 has been rewritten in independent form. Although the Examiner rejected claim 14 under 35 U.S.C. § 103(a), no disclosure, teaching or suggestion in the prior art of record was noted that would render obvious the recitation of claim 14 that "the bulk material tube has an outer wall that is rectangular in shape and an inner wall that is elliptical in shape, a region between the outer wall and the inner wall including a liquid with an irradiation absorption characteristic that approximately matches an irradiation absorption characteristic of the bulk material in the bulk material tube." The Examiner pointed to the teaching of water cooled cavity walls in the prior art to reject claim 14, but claim 14 recites more than simply water cooled walls, and the prior art does not disclose, teach or suggest the recited shapes and liquid characteristics of claim 14. Accordingly, claim 14 (as rewritten in independent form) is in condition for allowance.

Claim 15 depends from amended independent claim 1, and is allowable therewith.

Claim 16 has been canceled without prejudice.

With this Amendment, claim 17 has been amended to include the elements previously recited in dependent claim 19. Although the Examiner rejected claim 19 under 35 U.S.C. § 103(a), no disclosure, teaching or suggestion in the prior art of record was noted that would render obvious the recitation of amended claim 17 that the system includes "a velocity measurement system for determining an actual rate of ground meat movement through the conduit and adjusting an irradiation dose provided by the irradiation assembly based on the determined rate." The Examiner pointed to the teaching of a velocity measurement system in the prior art to reject claim 19, but amended claim 17 recites adjusting an irradiation dose provided by the irradiation assembly based on the determined velocity, which is not disclosed, taught or suggested by the prior art. Accordingly, amended claim 17 is in condition for allowance.

Claim 18 depends from amended independent claim 17, and is allowable therewith.

Claim 19 has been canceled without prejudice.

In view of the foregoing comments, the rejections of claims 1, 5-8 and 12-19 have been overcome, and pending claims 1, 5-8, 12-15, 17 and 18 are in condition for allowance.

B. Claim 2

Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Garwood and Nablo in view of McKeown et al. (U.S. Patent No. 5,847,401). Claim 2 depends from amended independent claim 1, and is allowable therewith.

C. Claims 9-11

Claims 9-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Garwood, Nablo and McKeown et al. and in further view of Kanter (U.S. Patent No. 4,757,201). The Examiner stated that Kanter discloses a dosimetry carrier for monitoring the irradiation of bulk material, and that it therefore "would have been obvious to one of ordinary skill in the art that the ground meat irradiation apparatus and method of Garwood, Nablo and McKeown can be modified to use the dosimetry carrier of Kanter, to monitor radiation incident within the bulk volume from a number of different directions in order to provide a more accurate indication of the average radiation dose."

With this Amendment, claim 9 has been rewritten in independent form.

Even if the Kanter dosimetry carrier is employed in the Garwood/Nablo/McKeown apparatus, the elements recited in claim 9 are not satisfied, precluding a rejection under 35 U.S.C. § 103 since all elements of a claim must be disclosed, taught or suggested by a combination of prior art references in order to properly reject a claim as being obvious. See M.P.E.P. 2143.03, citing In re Royka, 180 U.S.P.Q. (BNA) 580 (C.C.P.A. 1974). Claim 9 recites "a dosimetry carrier entry port in the bulk material tube upstream from the irradiation assembly" and "a dosimetry carrier exit port in the bulk material tube downstream from the irradiation assembly." These entry and exit ports are not disclosed, taught or suggested by any prior art reference of record, including Kanter. Kanter discloses that a dosimetry carrier is input to the system with the bulk material at the bulk material input, and is extracted from the system with the bulk material at the bulk material output. No entry and exit ports are disclosed, nor is there any teaching or suggestion by Kanter or in any other prior art of record to modify a system to include an entry port and an exit port for dosimetry carriers. Accordingly, claim 9 (as rewritten in independent form) is in condition for allowance.

Claims 10 and 11 depend from independent claim 9, and are allowable therewith. In addition, it is respectfully submitted that the features recited in claims 10 and 11 are also not disclosed, taught or suggested by the prior art of record, although this does not need to be specifically addressed herein since any claim depending from a patentable independent claim is also patentable. See M.P.E.P. 2143.03, citing In re Fine, 5 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1988).

#### CONCLUSION

In view of the foregoing, all pending claims 1, 5-15, 17 and 18 are in condition for allowance. A notice to that effect is respectfully requested.

The Examiner is cordially invited to contact the undersigned at the telephone number listed below if such a call would in any way facilitate the allowance of this application.

First Named Inventor: Stan V. Lyons

Application No.: 10/718,754

-11-

Should the Examiner determine that a further rejection of the claims is warranted, it is respectfully requested that the pertinence of each reference to each rejected claim be specifically addressed, in accordance with 37 C.F.R. 1.104(c)(2).

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: 9/1/04

By: 

Alan M. Koenck, Reg. No. 43,724  
THE KINNEY & LANGE BUILDING  
312 South Third Street  
Minneapolis, MN 55415-1002  
Telephone: (612) 339-1863  
Fax: (612) 339-6580

AMK